REMARKS

Claims 1-10 are pending. By this Amendment, claims 1 and 9 are amended. The amendments are supported by the originally filed specification and claims. No new matter is added.

Applicants thank the Examiner for indicating that claims would be allowable if rewritten in independent form.

Claims 1-4 and 9-10 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103 as being obvious over, U.S. Patent No. 5,606,882 to Klug et al. ("Klug '882"), U.S. Patent No. 5,648,016 to Klug et al. ("Klug '016"), or U.S. Patent No. 5,779,931 to Klug et al. ("Klug '931"). This rejection is traversed.

Further to the remarks in the Response filed January 27, 2006, Applicants respectfully maintain that neither Klug '882, Klug '016, nor Klug '931 teach or suggest compositions IV and V) of claims 1 and 9, or the process of claim 1. Present claim 1 is directed to "[i]n a process for foaming polyurethanes comprising adding CFC 11 to compositions used to make solid polymers to give a homogeneous foam having density of about 30 Kg/cm^3, the improvement comprising substituting CFC 11 with azeotropic or near azeotropic foaming agent compositions, wherein said foaming agent compositions are selected from the group consisting of:" compositions IV) and V). Meanwhile, independent claim 9 is directed to "[i]n polyurethane polymer foaming compositions comprising CFC-11 to give a homogeneous foam having density of about 30 Kg/cm^3, the improvement comprising the substitution of CFC-11 with foaming agent azeotropic or

near azeotropic compositions selected from the group consisting of:" compositions IV) and V). Compositions IV) and V) are disclosed as follows:

		Composition % by weight
IV)	difluoromethoxy bis(difluoromethyl ether) ($HCF_2OCF_2OCF_2H$);	1-99
	1,1,1,3,3-pentafluorobutane ($CF_3CH_2CF_2CH_3$, HFC 365mfc)	99-1
V)	difluoromethoxy bis(difluoromethyl ether) ($HCF_2OCF_2OCF_2H$);	1-40
	1,1,1,4,4,4-hexafluorobutane ($CF_3CH_2CH_2CF_3$, HFC 365ffa)	99-60

(See, e.g., claims 1 and 9).

The cited patents to Klug et al. do not specifically teach or suggest "1,1,1,3,3-pentafluorobutane ($CF_3CH_2CF_2CH_3$, HFC 365mfc)" of composition IV) or "1,1,1,4,4,4-hexafluorobutane ($CF_3CH_2CH_2CF_3$, HFC 365ffa)" of composition V), much less in combination with the hydrofluorethers of Klug et al. or the "difluoromethoxy bis(difluoromethyl ether) ($HCF_2OCF_2OCF_2H$)" of composition IV) and the "difluoromethoxy bis(difluoromethyl ether) ($HCF_2OCF_2OCF_2H$)" of composition V), respectively. On this latter point, Applicants remark that the Examiner seems to already acknowledge that Klug et al. does not disclose IV) and V) of the presently claimed invention. In particular, page 3, lines 13-14 of the February 14, 2006 Office Action, states "patentees fail to specifically exemplify applicant's claimed component species" (emphasis added).

Applicants also submit that the cited patents to Klug et al. merely disclose compositions formed of a hydrofluoroether and, respectively, of a hydrofluorocarbon, each of which are represented by general formulas embracing all possible hydrofluoroethers and hydrofluorocarbons that can be used according to said patents. Therefore, as asserted by the Office Action, the binary compositions according to the cited patents to Klug et al. seem to be attempting to cover compositions obtainable with every possible combination of a hydrofluoroether and a hydrofluorocarbon falling within the disclosed general formulas.

However, Applicants respectfully submit that the Declaration of Dr. Basile shows that only specific compositions of a hydrofluoroether and a hydrofluorocarbon can be used according to the present invention, i.e. as substitutes of CFC 11 to obtain a foam having about the same physical properties and foam density of that given by CFC 11 ("about 30 kg/cm^3" in claims 1 and 9), under the conditions employed to obtain a foam with said CFC. In fact, the Declaration shows that foams prepared from the same polyurethane polymer with blowing azeotropic compositions disclosed by Klug et al., expanded in the same conditions used for CFC 11, gave foams that were different from those obtained with CFC 11.

Applicants remark that the fact that the hydrofluorocarbon and hydrofluoroether of the compositions IV) and V) of the presently claimed invention may fall within the corresponding general formulas of the abstracts of the cited patents to Klug et al. does not mean that the present claims lack novelty over these references, as the cited patents to Klug et al. do not specifically disclose the compositions or otherwise teach or suggest

the advantages of said compositions. Applicants respectfully submit that relying both on the general formulas of the hydrofluoroether and hydrofluorocarbon given in the abstracts of Klug and on the disclosure of said patents, those of skill in the art would not have been able to select between the therein reported azeotropic compositions, much less a selection to achieve the compositions of the presently claimed invention and the unexpected advantages thereof. Applicants wish to stress that the technical problem of the present invention was not just to have available blowing agents to produce a polyurethane foam, but to have available azeotropic compositions that, when blown in a polyurethane material under the same conditions of CFC 11, would yield foams having physical properties and in particular a density comparable to that given by CFC 11.

If such a selection would have been obvious over the cited patents to Klug et al., as asserted in the Office Action, Dr. Basile in his declaration would have found that all the compositions of Klug et al. were equally suitable to form polymeric foams having about the same density of CFC 11, when let to foam in polymeric materials under the same conditions of CFC 11. However, the Declaration shows that this was not the case. Applicants also remark that there would have been no motivation or pallid hint in the cited patents to Klug et al. to select compositions IV) and V) of claims 1 and 9 to solve the technical problem of the present invention.

Applicants note that Example 2 on page 32 of the present specification discloses an embodiment of the present invention that was blown in polymeric materials under the same conditions employed to obtain a foam with CFC 11. In brief, according to Example 2, the blowing agent was admixed with water and polyol and then, under stirring,

isocyanate was added and the foams were "allowed to freely expand until the completion of the reaction." In Table 14 on page 33 of the specification, the foams obtained with CFC 11 (Comparative Example α), composition IV) (Example γ), and composition V) (Example δ) were characterized in term of foam density and foam appearance. Examples γ and δ of Table 14 demonstrate that when a polymeric foam is expanded with the blowing agent compositions IV) and V) of the present invention, in the same conditions used for the blowing agent CFC 11, the foam density and foam appearance are about the same.

Applicants respectfully submit that none of the cited patents to Klug et al. mention CFC 11, much less compositions suitable to be used as substitutes of CFC 11. Therefore, Applicants respectfully submit that claims 1 and 9 are novel over the cited prior art.

In response to the Examiner assertion on page 3, lines 17-19 of the Office Action, asserting that controlling the density of the foam to arrive at certain or specific density values amounted only to the control and optimization of result effective variables, Applicants submit that the declaration signed by Dr. Basile shows that under the same conditions used to expand polyurethane material with CFC 11, seven different compositions, randomly selected from those disclosed by cited patents to Klug et al., produced foams different from that obtained with CFC 11.

We recall that in, the case of the present invention the issue is not of controlling and optimizing result effective variables. Instead, binary azeotropic compositions must be found having the following combination of properties:

- They should produce foams having comparable density with those obtained with CFC 11
- The conditions used to obtain said foams should be the same used for CFC 11.

As all of the elements from the presently claimed invention and the resultant combinations are not taught or suggested by the cited patents to Klug et al., Applicants respectfully submit that claims 1 and 9 are not anticipated by or obvious over the cited patents to Klug et al. Further, dependent claims 2-4 and 10 are patentable for at least the same reasons. Thus, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1-4 and 9-10 under 35 U.S.C. § 102(b), or in the alternative, under 35 U.S.C. § 103(a) over the Klug '882, Klug '016, and/or Klug '931.

Claims 5-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the cited patents to Klug et al. in view of Barthelemy et al. (U.S. Patent No. 5,304,320). This rejection is traversed.

Please see the above discussion distinguishing claim 1 from the cited patents to Klug et al.

As claims 5-7 are dependent upon claim 1, Applicants submit that claims 5-7 are patentable for at least the same reasons as claim 1. Further, Applicants submit that Barthelemy et al. does not satisfy the deficiencies of the cited patents to Klug et al. Please see Applicants remarks in the Amendment filed January 4, 2005.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5-7 under 35 U.S.C. § 103(a) over the cited patents to Klug et al. in view of Barthelemy et al.

Applicants respectfully submit that, in contrast to the Examiner's assertions on page 4 of the Office Action (section 7), the Declaration is commensurate in scope with the present claims, the results are unexpected, and that those of skill in the art would not have been able to make modifications to other blowing compositions that yield unsuitable foams to obtain the presently claimed invention, much less in view of the disclosure of the cited references. The purpose of the declaration was to show that based upon the disclosure of the cited patents to Klug et al., those of skill in the art could not arrive at the solution of the technical problem of the present invention, i.e. to find compositions IV) and V) of claims 1 and 9. In order to show that the cited patents to Klug et al. do not teach or suggest the solution of the technical problem of the present invention, Applicants picked at random from the list of Table I of Klug '882, as those of skill in the art would have done if trying to solve the technical problem of the present invention to obtain different azeotropic compositions for testing their blowing properties in comparison with those of CFC 11. Applicants' results are unexpected since those of skill in the art would have not found in Klug et al. any motivation, or pallid hint, to the solution of the technical problem of the present invention. As a matter of fact, the cited patents to Klug et al. do not mention or even hint at the blowing properties of CFC 11.

Further, as noted above, Applicants submit that the declaration signed by Dr. Basile shows that under the same conditions used to expand polyurethane material with

CFC 11, seven different compositions, randomly selected from those disclosed by cited patents to Klug et al., produced foams different from that obtained with CFC 11. Once again, controlling and optimizing result effective variables of compositions from the cited references would have been insufficient for those of skill in the art to obtain the present invention, as binary azeotropic compositions must be found having the following combination of properties: (1) they should produce foams having comparable density with those obtained with CFC 11; and (2) the conditions used to obtain said foams should be the same used for CFC 11.

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event that this paper is not considered to be timely filed, an appropriate extension of time is requested. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account Number 01-2300, referencing Docket Number **108910-00123**.

Respectfully submitted,

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